

STATE WATER RESOURCES CONTROL BOARD
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

**DRAFT STAFF REPORT AND WORK PLAN
FOR
2019 REVIEW OF THE
WATER QUALITY CONTROL PLAN FOR OCEAN
WATERS OF CALIFORNIA**



June 24, 2019



State of California
Gavin Newsom, *Governor*

California Environmental Protection Agency
Jared Blumenfeld, *Secretary*

State Water Resources Control Board
<https://www.waterboards.ca.gov/>

E. Joaquin Esquivel, *Chair*
Dorene D'Adamo, *Vice Chair*
Tam M. Doduc, *Member*
Sean Maguire, *Member*
Laurel Firestone, *Member*
Eileen Sobeck, *Executive Director*
Jonathan Bishop, *Chief Deputy Director*
Eric Oppenheimer, *Chief Deputy Director*
Karen Mogus, *Division of Water Quality Deputy Director*

Prepared by:

Jonathan Dolan, Julie Johnson, Karen Black, and Katherine Walsh
Division of Water Quality
State Water Resources Control Board
California Environmental Protection Agency

Table of Contents

Table of Contents.....	1
List of Tables	2
List of Abbreviations.....	3
1 Introduction	4
2 Review Process	6
3 Recent Ocean Plan Amendments	7
4 Resources.....	9
5 Public Participation.....	10
6 Issue Priority Ranking Criteria.....	13
6.1 Issue Priority Evaluation Criteria	13
6.2 Issue Ranking Results.....	14
7 Issues Fact Sheets.....	16
Issue A: Constituents of Emerging Concern Monitoring Procedures	17
Issue B: Vessel Discharges and Invasive Species	18
Issue C: Suspended Solids Effluent Limitations	20
Issue D: Water Quality Objectives for Dioxin and Related Compounds.....	21
Issue E: Sediment Quality Objectives	22
Issue F: Ocean Acidification, Hypoxia, and Climate Change Impacts.....	24
Issue G: Toxicity Water Quality Objectives.....	25
Issue H: Shellfish Harvesting Beneficial Uses and Water Quality Objectives	27
Issue I: Exceptions to the Ocean Plan for Discharges into ASBS.....	28
Issue J: Nutrients and Objectionable Aquatic Growth Water Quality Objectives	30
Issue K: Background Seawater Concentrations for Effluent Limitation Calculations	31
Issue L: Expression of Water Quality Objectives for Metals.....	32
Issue M: Mixing Zone and Dilution Implementation Provisions	33
Issue N: Bacteria Objectives for Water Contact Recreation.....	34
Issue O: Desalination Implementation Provisions.....	35
Issue P: Review of Water Quality Objectives and References in Table 3	37
Issue Q: Non-Substantive Administrative Changes	37
Issue R: Expand Waste Definition to Include Potential Discharges	38
Issue S: Natural Source Exclusion	39
Issue T: Tribal Beneficial Uses.....	40

Issue U: Microplastics and Microfibers	41
Issue V: Exception to the Ocean Plan for San Francisco Storm Water and Wastewater Discharges	43
8 2019 Ocean Plan Review Work Plan.....	45
Appendix 1 – Issue Evaluation Matrix	48

List of Tables

Table 1: 2019 Ocean Plan Review Scoping Meeting Participants.....	10
Table 2: Point Ranges for Priority Ranking	14
Table 3: 2019 Ocean Plan Review Issue Priority List.....	45
Table 4: Number of Issues per Priority Rank	47

List of Abbreviations

2011 Ocean Plan Review	California Ocean Plan Triennial Review Workplan 2011 - 2013
ASBS	Area of special biological significance
BEFs	Bioaccumulation equivalency factors
CCR	California Code of Regulations
CEC	Constituents of emerging concern
C.F.R.	Code of Federal Regulations
CUL	Tribal Tradition and Culture Beneficial Use
Dioxins	Polychlorinated dibenzo-para-dioxins and related compounds
EBE Plan	Water Quality Control Plan for Enclosed Bays and Estuaries of California
Furans	Polychlorinated dibenzofurans
ISWEBE Plan	Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California
NPDES	National Pollution Discharge Elimination System
Ocean Plan	Water Quality Control Plan for Ocean Waters of California
Ocean Unit	Ocean Standards Unit
PY	Personnel year
Regional Water Boards	Regional Water Quality Control Boards
SCCWRP	Southern California Coastal Water Research Project
State Water Board	State Water Resources Control Board
T-SUB	Tribal Subsistence Fishing Beneficial Use
TCDD	2,3,7,8-Tetrachlorodibenzo-p-dioxin
TEFs	Toxicity equivalence factors
U.S.C.	United States Code
U.S. Coast Guard	United States Coast Guard
U.S. EPA	United States Environmental Protection Agency
VGP	Vessel General Permit
VIDA	Vessel Incidental Discharge Act
Water Boards	State Water Board and Regional Water Boards, collectively

1 Introduction

The Water Quality Control Plan for Ocean Waters of California¹ (Ocean Plan) was adopted by the State Water Resources Control Board (State Water Board) on July 6, 1972, through Resolution No. 72-045² and was most recently amended in 2019. The Ocean Plan sets forth beneficial uses for ocean waters of California, establishes water quality objectives to protect those uses, and sets forth a program of implementation describing the actions necessary to achieve the water quality objectives. California's territorial boundaries for ocean waters extend three nautical miles beyond the state's outermost islands, reefs, and rocks, and include all waters between those islands and the coast. Ocean waters also include open bays, such as Monterey and Santa Monica Bay, and exclude enclosed bays, such as San Francisco Bay.

The State Water Board is California's water pollution control agency for all federal purposes (Wat. Code, § 13160). The State Water Board, along with the nine Regional Water Quality Control Boards (Regional Water Boards) (collectively, the State Water Board and the Regional Water Boards are referred to as the Water Boards) protects and enhances the quality of California's water resources through implementing the Federal Water Pollution Control Act Amendments of 1972, as amended (33 U.S.C. § 1251 et seq., also known as the Clean Water Act), and California's Porter-Cologne Water Quality Control Act (Wat. Code, § 13000 et seq.).

The State Water Board reviews the Ocean Plan periodically as required by Clean Water Act section 303(c)(1)³ and Water Code (Wat. Code) section 13170.2, subdivision (b). The review provides an opportunity for the public, stakeholders, and other interested parties to provide input on the Ocean Plan and identify planning priorities. The review results in a staff report and work plan, which includes a prioritized list of issues that guide planning efforts to ensure the continued adequacy of the Ocean Plan.

This Staff Report includes an overview of the water quality control plan review process, descriptions of amendments adopted into the Ocean Plan since the previous California Ocean Plan Triennial Review Workplan for 2011-2013⁴ (2011 Ocean Plan Review),

¹ The 2015 Water Quality Control Plan for Ocean Waters of California. The 2019 Ocean Plan will be released in July 2019, as amended by the Bacteria Provisions. The Ocean Plan section and table references contained in this Staff Report represent the updated numbering in the 2019 Ocean Plan. <https://www.waterboards.ca.gov/water_issues/programs/ocean/docs/cop2015.pdf>

² State Water Board Resolution No. 72-045 adopting the Ocean Plan in 1972. <https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/1972/rs72_045.pdf>

³ As used above, "section 303" refers to the section number of the Clean Water Act as enacted by Congress. The same section is codified in title 33 of the United States Code section 1313. The Staff Report shall refer to the sections of the Clean Water Act and not to the corresponding section appearing in title 33.

⁴ California Ocean Plan Triennial Review Workplan 2011-2013. <https://www.waterboards.ca.gov/water_issues/programs/ocean/docs/trirev/trirev2011_13.pdf>

public participation for this 2019 Ocean Plan Review, an explanation of issue priority ranking criteria, descriptions of the proposed issues, and issue prioritization and ranking that will guide future planning efforts for the Ocean Plan.

Issues that are identified as high or very high priority in this Staff Report and Work Plan may be undertaken as projects. Once a project is undertaken, State Water Board staff develops a project charter, which determines the scope of work and estimates the resources needed to complete the project. Once the project charter has been approved, State Water Board staff holds public scoping meetings to work with and receive input from stakeholders. State Water Board staff then produces a draft staff report and substitute environmental document that reviews the technical and scientific background of the proposed amendment to the Ocean Plan. Amendment language is developed, and all draft documents are released for a formal public comment period. Following the comment period, State Water Board staff responds to comments and updates the staff report and amendment language as needed. A public hearing for the amendment is held, followed by consideration of adoption of the amendment language and staff report by the State Water Board.

In most cases, the Office of Administrative Law and the U.S. Environmental Protection Agency must approve the amendment before it becomes effective and can be included in enforceable documents such as National Pollutant Discharge Elimination System permits. The amendment process typically takes multiple years from initial project scoping to final State Water Board adoption.

2 Review Process

Section 303(c)(1) of the Clean Water Act and Wat. Code section 13170, subdivision (b), require states to periodically review water quality standards. The State Water Board conducts periodic reviews of the Ocean Plan to identify and prioritize issues that modify existing or adopt new standards to keep pace with regulatory and policy changes, new technologies, and environmental shifts.

The 2019 Ocean Plan review process consists of several steps. State Water Board staff received input from Division of Water Quality and coastal Regional Water Boards' planning program staff to prepare the Initial Draft List of Projects⁵. This draft list was used to facilitate discussions during four scoping meetings held during January and February 2019. The State Water Board solicited input from a broad range of sources, including, but not limited to, the public, government agencies, non-governmental agencies, Native American tribes, and industry representatives. State Water Board staff reviewed available information to determine potential updates for beneficial uses, water quality objectives, and implementation provisions, as well as editorial changes.

Using the information gathered and input received, State Water Board staff drafted this Staff Report and a draft prioritized list of issues (referred to as the Work Plan), which will guide future planning efforts for the Ocean Plan. This Staff Report and the Work Plan will be released for a formal written comment period, during which State Water Board will hold a public staff workshop.

After the comment period, State Water Board staff will respond to comments and revise the Staff Report and prioritization of issues in the Work Plan as needed. State Water Board staff will then bring the revised Staff Report and Work Plan to the State Water Board for a joint hearing and consideration of adoption meeting. After adoption by the State Water Board, the Staff Report and Work Plan will be transmitted to the United States Environmental Protection Agency (U.S. EPA).

⁵ The Initial Draft List of Projects for the 2019 Ocean Plan Review was released on January 4, 2019. <https://www.waterboards.ca.gov/water_issues/programs/ocean/docs/initial_draft_2019-2021_triennial_project.pdf>

3 Recent Ocean Plan Amendments

The previous review of the Ocean Plan was conducted in 2011 and was adopted by the State Water Board through Resolution No. 2011-0013⁶ on March 15, 2011. Of the twenty-six issues identified in the 2011 Ocean Plan Review, six were identified as very high priority and ten were identified as high priority. Since 2011, the State Water Board has adopted five amendments to the Ocean Plan (described below). Four of these amendments address six high and very high priority issues identified in the 2011 Ocean Plan Review.

- State Water Quality Protection Areas and Marine Protected Areas Amendment

The State Water Board adopted new criteria for designating State Water Quality Protected Areas and protecting specific types of discharges near Marine Protected Areas on October 16, 2012, through Resolution No. 2012-0056⁷. These new criteria and protections took effect on July 1, 2013. This project was Issue 1 in the 2011 Ocean Plan Review.

- Model Monitoring, Vessel Discharges, and Non-Substantive Changes Amendments

The State Water Board adopted Resolution No. 2012-0057⁸ on October 16, 2012, which amended the Ocean Plan to include more effective and efficient means of monitoring the effects of discharges into ocean waters (through model monitoring), align provisions with state and federal laws and regulations for commercial vessel discharges, and apply various formatting and grammatical changes. These monitoring changes, provisions for vessel discharges, and non-substantive updates to the Ocean Plan took effect on July 1, 2013. This project stemmed from Issues 2, 3, and 25 in the 2011 Ocean Plan Review.

- Trash Amendment

The State Water Board adopted provisions to control trash entering California's ocean waters on April 7, 2015, through Resolution No. 2015-0019⁹. These new

⁶ State Water Board Resolution No. 2011-0013.

<https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2011/rs2011_0013.pdf>

⁷ State Water Board Resolution No. 2012-0056.

<https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2012/rs2012_0056.pdf>

⁸ State Water Board Resolution No. 2012-0057.

<https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2012/rs2012_0057.pdf>

⁹ State Water Board Resolution No. 2015-0019.

<https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2015/rs2015_0019.pdf>

controls on trash entering California's oceans took effect on January 12, 2016. This project was Issue 8 in the 2011 Ocean Plan Review.

- Desalination Amendment

The State Water Board adopted an amendment to the Ocean Plan to address impacts to marine life associated with the construction and operation of seawater desalination facilities. This amendment was adopted by the State Water Board on May 6, 2015, through Resolution No. 2015-0033¹⁰ and took effect on January 28, 2016. This project was Issue 4 in the 2011 Ocean Plan Review.

- Bacteria Objectives Amendment

The State Water Board adopted new statewide bacteria water quality objectives and implementation provisions to protect recreational users from the effects of pathogens in California water bodies on August 7, 2018, through Resolution No. 2018-0038¹¹. These bacteria objectives and implementation provisions took effect on February 4, 2019.

¹⁰ State Water Board Resolution No. 2015-0033.

<https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2015/rs2015_0033.pdf>

¹¹ State Water Board Resolution No. 2018-0038.

<https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2018/rs2018_0038.pdf>

4 Resources

State Water Board staff resources available for work on issues identified in the Work Plan are primarily within the Division of Water Quality's Ocean Standards Unit (Ocean Unit), although resources from other units within the Water Boards are also available. While the prioritized issues may guide the Ocean Program's work for longer than three years, for the purposes of this Staff Report resources are estimated over a three-year period.

The Ocean Unit currently has three full-time employees and one sea grant fellow, equating to four personnel years (PY) dedicated to Ocean Program work per year. Ocean Unit staff are working on existing projects such as Ocean Plan amendments and reviews, the Statewide Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling, Safe to Swim Network and Beach Safety Monitoring Program, and individual exceptions to the Ocean Plan for discharges into areas of special biological significance (ASBS). Due to limited resources, State Water Board staff will be dedicated to one or more higher priority projects identified in the Work Plan in the coming years.

5 Public Participation

In July 2018, the State Water Board initiated the 2019 Ocean Plan Review process by soliciting input from the Division of Water Quality and coastal Regional Water Boards' planning programs. State Water Board staff revisited the remaining issues from the 2011 Ocean Plan Review and identified additional issues to consider during the 2019 Ocean Plan Review. State Water Board staff then developed the Initial Draft List of Projects for public review to inform the four scoping meetings held in January and February 2019. At these scoping meetings, State Water Board staff communicated the 2019 Ocean Plan Review process and received informal comments from participants.

Scoping meeting attendees and commenters included Native American tribal members and representatives, non-government organizations, environmental justice groups, governmental agencies, industry representatives, and the public. Participants expressed both support and opposition for proposed issues as well as new issues to consider. Participants who attended the scoping meetings are listed in Table 1 below. State Water Board staff used informal comments received at the scoping meetings to refine the draft list of issues in the Work Plan.

As stated in Section 2, a written comment period and staff workshop will be held focusing on this draft Staff Report and Work Plan. After the comment period, State Water Board staff will respond to written comments and revise this document as necessary. Following the response to comments, State Water Board staff will bring the Staff Report and Work Plan to the State Water Board for consideration at a joint public hearing and adoption meeting.

Table 1: 2019 Ocean Plan Review Scoping Meeting Participants

2019 Ocean Plan Review Scoping Meetings Participants
AES Corporation
Big Valley Band of Pomo Indians
Cahto Tribe of the Laytonville Rancheria
CalDesal
California Coastkeeper Alliance
California Ocean Protection Council
California State Lands Commission
CDW Research and Consulting
Chevron Corporation
City of Morro Bay
City of Oceanside

2019 Ocean Plan Review Scoping Meetings Participants
City of San Diego
DeepWater Desal
Elem Indian Colony of Pomo Indians of the Sulphur Bank Rancheria
GHD on behalf of South Coast Water District
Habematolel Pomo of Upper Lake
Heal the Bay
IDE Technologies
Individual citizens
Kashia Band of Pomo Indians of the Stewarts Point Rancheria
Larry Walker Associates
Lawrence Livermore Lab
Liberty Utilities
Los Angeles County Sanitation District
Los Angeles Department of Water and Power
Los Angeles Regional Water Board
Mayor of Salinas
MBC Aquatic Sciences
McHugh Koepke & Associates
Mesa Water District
Michael Baker International
Middletown Rancheria of Pomo Indians
Miller Marine Science & Consulting
Municipal Water District of Orange County
North Coast Regional Water Board
California State University at Sacramento - Office of Water Programs
Orange County Coastkeeper
Orange County Sanitation District
Pacific EcoRisk
PC Law Group
Quintana, Watts & Hartmann
Regional District of Nanaimo
Robinson Rancheria Pomo Indians
Round Valley Indian Tribes of the Round Valley Reservation
San Diego County Water Authority

2019 Ocean Plan Review Scoping Meetings Participants
San Diego Regional Water Board
San Francisco Public Utilities Commission
Santa Ana Regional Water Board
Santa Barbara Channelkeeper
Scotts Valley Band of Pomo Indians
Sherwood Valley Rancheria of Pomo Indians/ Yokayo
South Orange County Wastewater Authority
Southern California Coastal Water Research Project
Tenera Environmental
The Otter Project
Tomaras & Ogas, LLP
Venture Water
West Basin Municipal Water District

6 Issue Priority Ranking Criteria

6.1 Issue Priority Evaluation Criteria

Due to the complexity of the amendment process and limited staff resources, State Water Board staff established a list of criteria used to rank the overall priority of each proposed issue. The criteria below are organized into groups that reflect State Water Board values and allow staff to streamline the prioritization process.

Group 1 Criteria: Water Quality, Customer Service, and Consistency Values

Criteria in this group pertain to water quality, customer service, consistency, and statewide needs.

1. Potential for Improving Conditions Consistent with the Water Boards' Mission – 15 points

Issues that have the potential to improve the preservation, enhancement, and restoration of California's water quality and beneficial uses of water will be given higher scores, while issues that result in little or no direct improvement will be given lower scores.

2. Providing Improved Customer Service – 5 points

This criterion recognizes issues that facilitate program implementation, clarify Ocean Plan language, and provide better customer service. Higher scores will be given to issues that address at least one of these areas.

3. Aligning Statewide Needs – 10 points

This criterion recognizes issues that would either align water quality control plans and provide consistency or address needs in more than one region. This criterion also recognizes issues that address existing Board direction and impact more than one region, such as climate change resiliency. Issues that would provide consistency statewide or between regions will receive a higher score.

Group 2 Criteria: Potential for Success

Criteria in this group pertain to an issue's potential for success.

4. Resources Already Invested – 5 points

This criterion recognizes and gives a higher priority to issues for which resources have already been expended. Resources may include State or Regional Water Board staff efforts, grant funding, scientific research, or collaboration with other agencies.

5. Resources Likely Available – 5 points

Similarly, where resources will be or will continue to be dedicated to an issue, higher priority is given. Such resources can augment State Water Board staffing, helping to complete controversial or complex projects that otherwise might not have adequate staffing.

6. Potential for Completion – 10 points

This criterion recognizes that projects already close to completion, or those with lower controversy or lower technical complexity, can be completed efficiently and with fewer State Water Board staff resources. Higher scores will be assigned for non-controversial issues or for those that are considered as straightforward from a technical perspective.

6.2 Issue Ranking Results

A score was assigned to each criterion for each proposed issue. Points across all criteria were summed for each issue to determine the overall score. To facilitate limited resources and time efficiently, State Water Board staff will generally focus on the highest priority issues. Therefore, issues are ranked as very high, high, medium, or low priority, where higher scores represent higher priority issues. Each rank is determined by the following point ranges shown in Table 2:

Table 2: *Point Ranges for Priority Ranking*

Point Range	Priority Ranking
46 to 50	Very High
36 to 45	High
21 to 35	Medium
0 to 20	Low

The score that a proposed issue receives does not reflect its level of importance. The ranking system is comparative and will allow State Water Board staff to efficiently and effectively focus resources over the next several years. Lower priority projects are kept on record, may be staffed in the future should priorities change, and may be revisited in future reviews.

As stated in Section 5, following the formal written comment period State Water Board staff will revisit the Issue Evaluation Matrix in Appendix 1 and adjust criteria scores as necessary considering the comments received. Changes in issue priority rank following the formal comment period will be reflected in the 2019 Ocean Plan Review Issue Priority List in Section 8.

7 Issues Fact Sheets

This section lists the issues under consideration for the 2019 Ocean Plan Review. Proposed issues are arranged by the identifying letter originally assigned in Initial Draft List of Projects released in January 2019.

Descriptions of the proposed issues for the 2019 Ocean Plan Review are presented as fact sheets. Each fact sheet is organized in the following manner and generally contains the following information:

Issue Name and Identifier	Briefly describes the issue focus and lists the letter assigned to the issue in the Draft Proposed List of Projects.
Ocean Plan Section	Cites the relevant portions of the Ocean Plan. With the adoption of the Bacteria Objectives Amendment in 2018, two new tables were added to the Ocean Plan. All table references in the issue fact sheets use the table numbers in the forthcoming 2019 Ocean Plan.
Summary	Provides a brief overview of the issue's background and a description of the issue's goals. Bolded text at the beginning of each summary provides a one to two sentence snapshot of the main point(s) of each issue.
History	Describes past State Water Board commitments, if any, and whether the issue was included in prior Ocean Plan reviews.
Recommendation	Describes State Water Board staff's recommendations regarding issue action and provides a brief explanation of the recommendation.
Evaluation Score	Provides the issue's total evaluation score (maximum 50 points).
Priority	Groups the issue into one of four priority ranks: Very High, High, Medium, and Low.
Estimated Resources Required	Provides an estimate of PYs needed to address the issue in the Ocean Plan. Unless specified, resources are estimated for a three-year period.

Issue A: Constituents of Emerging Concern Monitoring Procedures

Ocean Plan Section: Appendix III (Standardized Monitoring Procedures)

Summary: The State Water Board may consider amending the Ocean Plan to include direction for monitoring constituents of emerging concern (CECs) in ocean waters.

CECs are a large group of constituents that may or may not pose a risk to human health and ecosystems. CECs include pharmaceuticals and metabolites, industrial chemicals, pesticides, personal care products, household chemicals, food additives, transformation products¹², natural chemicals, and more.

At present, CEC monitoring in surface waters is region specific. The need for statewide CEC monitoring was identified in the 2011 Ocean Plan Review, when several stakeholders recommended routine water quality monitoring and the coordination of regional monitoring efforts. State Water Board staff determined that not enough scientific information about CECs existed to direct CEC monitoring protocols in the 2012 Model Monitoring, Vessel Discharges, and Non-Substantive Changes Amendment to the Ocean Plan.

In order to examine this category of constituents, the State Water Board funded a CEC Science Advisory Panel, which released a report in 2012 titled, “Monitoring Strategies for Chemicals of Emerging Concern in Aquatic Ecosystems.” This document provides guidance and recommendations for statewide CEC monitoring in the aquatic environment based on state-of-the-art science of both the occurrence of known contaminants and the availability of toxicological information.

In an effort to create a uniform statewide CEC management strategy, the State Water Board is developing a multi-phased CEC Initiative to compile existing information, improve coordination, advance knowledge, and implement a CEC management framework. In addition, the State Water Board is funding projects to compile existing statewide CEC data and re-convene the 2009 science advisory panel to provide recommendations for CECs in aquatic ecosystems, including marine ecosystems. The Science Advisory Panel will provide recommendations to the State Water Board in 2021, at which time State Water

¹² When CECs are not completely mineralized, they may undergo transformation by abiotic and/or biotic processes resulting in intermediate transformation products. Transformation products tend to be less bioaccumulative than CECs, but some may persist in the environment and exhibit more highly toxic effects on aquatic organisms.

Board staff will consider recommendations appropriate programmatic and regulatory actions for statewide CEC monitoring.

History: Issue 2 of the 2011 Ocean Plan Review

Recommendation: At this time, State Water Board staff does not recommend amending Appendix III of the Ocean Plan to include standard monitoring procedures for CECs. However, State Water Board staff will continue to develop a statewide CEC management strategy through the CEC Initiative and fund research related to CECs in California's aquatic ecosystems.

Evaluation Score: 29

Priority: Medium

Estimated Resources Required: None; however, there are resources dedicated to this effort through other State Water Board programs.

Issue B: Vessel Discharges and Invasive Species

Ocean Plan Section: Chapter III.K (Implementation Provisions for Vessel Discharges)

Summary: This issue may revise provisions in the Ocean Plan for the control of vessel incidental discharges and invasive species.

California's ocean waters are protected by the requirements of the Clean Coast Act of 2005, which prohibits cruise ships and certain oceangoing ships from discharging hazardous waste, oily bilgewater, graywater, and other wastes. In addition, California's ocean waters are protected by no discharge zones, in which the discharge of treated and untreated vessel sewage is prohibited per Clean Water Act section 312.

Some discharges incidental to the normal operation of vessels are allowed under the U.S. EPA's 2013 Vessel General Permit¹³ (VGP). Incidental discharges consist of 27 different types of discharges, with the most common being ballast water, bilgewater, and deck washdown and runoff.

The Vessel Incidental Discharge Act (VIDA) took effect on December 4, 2018. VIDA requires the U.S. EPA to develop national standards of performance for

¹³ U.S. EPA website on the Final 2013 Vessel General Permit. <<https://www.epa.gov/npdes/vessels-vgp>>

marine pollution control devices and implement new regulations similar to the VGP by December 2020. VIDA also requires the U.S. Coast Guard to develop implementation, compliance, and enforcement regulations by December 2022. Until these new regulations become enforceable, the VGP requirements remain in effect. The future regulations are expected to be at least as stringent as the VGP requirements and will be technology-based. The State Water Board will continue to follow the developments associated with VIDA and will assess the need to revise the implementation provisions for vessel discharge in Chapter III.K of the Ocean Plan. Standards for sewage and the no discharge zones will not be impacted by VIDA requirements.

Marine Invasive species are primarily transported by vessels, specifically due to biofouling and ballast water discharges. Worldwide, 42% of threatened or endangered species are listed because of impacts from invasive species. Invasive zebra mussels (*Dreissena polymorpha*) have caused localized extinction of species and declines in recreationally valuable fishes ¹⁴. Addressing the control of invasive species resulting from vessel incidental discharges is primarily undertaken by the State Lands Commission and is outside of the State Water Board's authority. The State Water Board will continue to monitor the work of the State Lands Commission and the U.S. EPA in relation to marine invasive species and ballast water management. In addition, the State Water Board will assess whether treatment technologies and treatment requirements employed to prevent the release of marine invasive species from vessel incidental discharges, such as chlorination, raise water quality concerns. If water quality concerns arise, the State Water Board will assess the need to require compliance with existing water quality objectives in the Ocean Plan and determine if new water quality standards and implementation provisions need to be developed.

History: Issue 6 of the 2005 Ocean Plan Review

Recommendation: At this time, State Water Board staff does not recommend amending Chapter III.K of the Ocean Plan. State Water Board staff will continue to monitor the progress of vessel incidental discharge requirements developed by the U.S. EPA and U.S. Coast Guard and will assess the need to revise the implementation provisions for vessels in Chapter III.K. In addition, State Water Board staff will assess whether water quality is impacted by treatment requirements or treatment technologies employed to prevent the release of marine invasive species in vessel incidental discharges.

¹⁴ The State Land's Commission's "2018 Assessment of the Efficacy, Availability, and Environmental Impacts of Ballast Water Treatment Technologies for Use in California Waters," <https://www.slc.ca.gov/wp-content/uploads/2019/01/2018.pdf>

Evaluation Score: 19

Priority: Low

Estimated Resources Required: <0.5 PY to monitor the progress of vessel incidental discharge requirements developed by the U.S. EPA and U.S. Coast Guard and 1 PY to develop an Ocean Plan amendment.

Issue C: Suspended Solids Effluent Limitations

Ocean Plan Section: Chapter III.B (Table 4 Effluent Limitations)

Summary: The State Water Board may amend the suspended solids effluent limitation in Table 4 to be consistent with U.S. EPA secondary wastewater treatment requirements.

Table 4, formerly Table 2, suspended solids effluent limits were added to the Ocean Plan when many ocean sewage dischargers were only subject to primary wastewater treatment requirements. This is no longer the case as U.S. EPA now generally requires secondary or equivalent treatment for effluent quality (40 C.F.R. § 133.102). However, the Ocean Plan's suspended solids effluent limits are still based on primary treatment requirements.

During the 2005 Ocean Plan Review, the Central Coast Regional Water Quality Control Board highlighted this discrepancy between the Ocean Plan's suspended solids limits and U.S. EPA's standards. U.S. EPA requires that effluent limitations for total suspended solids in National Pollutant Discharge Elimination System (NPDES) permits must be at least as stringent as standards adopted under the Clean Water Act (Clean Water Act § 303(e)(3)(A)).

The issue was raised again in the 2011 Ocean Plan Review. Since then, all but one ocean sewage dischargers have upgraded from primary to secondary treatment.¹⁵

History: Issue 7 of the 2011 Ocean Plan Review and Issue 22 of the 2005 Ocean Plan Review

¹⁵ The exception is the City of San Diego's Point Loma ocean outfall, which discharges to federal waters and is subject to a modified NPDES permit.

Recommendation: As resources are available, State Water Board staff recommends updating the suspended solids effluent limitation to be consistent with U.S. EPA secondary wastewater treatment requirements.

Evaluation Score: 31

Priority: Medium

Estimated Resources Required: 1 PY

Issue D: Water Quality Objectives for Dioxin and Related Compounds

Ocean Plan Section: Appendix I (Definition of Terms)

Summary: Water quality objectives for Tetrachlorodibenzo-p-dioxin (TCDD) and TCDD-equivalents may be updated to reflect current toxicity equivalence factors (TEFs) to be consistent with the California Toxics Rule.

TCDD and equivalent compounds, which include polychlorinated dibenzo-para-dioxins (dioxins) and polychlorinated dibenzofurans (furans), are persistent organic pollutants with carcinogenic properties. Dioxins and furans are byproducts of combustion and various manufacturing processes. Water contamination can occur through industrial contamination of water or erosion of contaminated soil. In California, dioxins have been detected in storm water outfalls to ocean waters at levels that exceed U.S. EPA standards.

The Ocean Plan uses TEFs to express the toxicity of TCDD-equivalents relative to TCDD, which is the most toxic chemical of this group. TEFs are used in the calculation of dioxin-toxic equivalency values, which reflect the combined toxicity of dioxins and furans in a sample. However, the Ocean Plan's TEFs do not reflect the latest values used by U.S. EPA and its California Toxics Rule¹⁶.

Additionally, the Ocean Plan does not account for the ability of TCDD and equivalent compounds to bioaccumulate. In past reviews, commenters have suggested including bioaccumulation equivalency factors (BEFs) in dioxin equivalency calculations. The San Francisco Bay Regional Water Board amended monitoring and reporting provisions for their NPDES wastewater discharge permits

¹⁶ U.S. EPA's California Toxics Rule. <<https://www.federalregister.gov/documents/2000/05/18/00-11106/water-quality-standards-establishment-of-numeric-criteria-for-priority-toxic-pollutants-for-the>>

to account for BEFs through Order No. R2-2010-0054.¹⁷ While Order No. R2-2010-0054 was published after U.S. EPA released updated TEFs, it does not include the updated values. Therefore, if BEFs are considered, their values should be reviewed in relation to U.S. EPA's updated TEFs.

History: Issue 10 of the 2011 Ocean Plan Review, and Issue 8 of the 2005 Ocean Plan Review

Recommendation: As resources allow, State Water Board staff recommends updating the TEFs for TCDD in Appendix I of the Ocean Plan, which would align the Ocean Plan with the TEFs in the California Toxics Rule for dioxin and equivalent compounds. In addition, State Water Board staff recommends additional research to determine the appropriateness of establishing BEFs in the Ocean Plan to account for bioaccumulation of these contaminants.

Evaluation Score: 29

Priority: Medium

Estimated Resources Required: 1.5 PY

Issue E: Sediment Quality Objectives

Ocean Plan Section: Chapter II.D (Chemical Characteristics)

Summary: The State Water Board may develop sediment quality objectives for the Ocean Plan to protect benthic communities, human health, and marine wildlife.

Sediments in coastal and marine environments are often contaminated with a variety of pollutants stemming from many sources. Transported sediment may accumulate contaminants before entering and settling at the bottom of receiving water bodies. Contaminated sediment often remains toxic for decades, and it can negatively impact benthic species and the marine life and humans that directly or indirectly feed on them.

¹⁷ San Francisco Bay Regional Water Board Order No. R2-2010-0054.
<https://www.waterboards.ca.gov/sanfranciscobay/board_decisions/adopted_orders/2010/R2-2010-0054.pdf>

On June 5, 2018, the State Water Board adopted Resolution No. 2018-0028¹⁸, amending the Water Quality Control Plan for Enclosed Bays and Estuaries of California (EBE Plan) with the Sediment Quality Provisions¹⁹. These provisions contain three narrative sediment quality objectives that address specific exposure pathways and receptors. These objectives are meant to assist in protecting benthic communities, human consumers of fish, and wildlife from either direct exposure to contaminants or through bioaccumulation of contaminants into the food web. The provisions also include a program of implementation for each objective that contains specific indicators, tools, and implementation requirements to determine if sediment quality meets the objective. The indicators are calibrated for the specific habitat in which they are applied, namely enclosed bays and estuaries. Indicators and assessment tools specific to open bays and ocean waters would need to be developed.

The Ocean Plan also contains narrative objectives for sediments to protect benthic communities, indigenous biota, and marine life from degradation. However, these objectives differ from the sediment quality objectives for enclosed bays and estuaries by only addressing specific contaminants (e.g. Table 3, formerly Table 1) and lack a program of implementation to evaluate sediment quality consistently throughout ocean waters of California.

History: Issue 12 of the 2011 Ocean Plan Review, Issue 11 of the 2005 Ocean Plan Review, and Section 3(f) of the 1999 Ocean Plan Review

Recommendation: As resources are available, State Water Board staff recommends developing sediment quality objectives and program of implementation for the Ocean Plan consistent with the EBE Plan to augment current protection of benthic communities, aquatic life, and human health that may be affected via food web transfer.

Evaluation Score: 28

Priority: Medium

Estimated Resources Required: 2.5 PY

¹⁸ Resolution No. 2018-0028.

<https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2018/rs2018_0028.pdf>

¹⁹ Sediment Quality Provisions in the Enclosed Bays and Estuaries Plan.

<https://www.waterboards.ca.gov/water_issues/programs/bptcp/docs/sediment/sed_qual_provs.pdf>

Issue F: Ocean Acidification, Hypoxia, and Climate Change Impacts

Ocean Plan Section: Chapter II (Water Quality Objectives)

Summary: The State Water Board may amend the Ocean Plan to address impacts of climate change on California's coastal waters, such as ocean acidification and hypoxia.

The California Public Resources Code (Pub. Resources Code) recognizes that anthropogenic greenhouse gas emissions responsible for climate change are also driving major shifts in the chemical properties of the world's oceans (Pub. Resources Code, § 35630(c)). Furthermore, Executive Order N-10-19²⁰ directs state agencies to prepare a water resiliency portfolio that meets the needs of California's communities, economy, and environment. In 2017, the State Water Board adopted Resolution No. 2017-0012²¹, requiring a proactive approach to climate change in all regional and state actions.

Some of the significant ocean changes resulting from climate change include the following:

- Ocean acidification, which occurs when increased carbon dioxide absorption into ocean waters causes a series of chemical reactions that lower pH levels and increase ocean acidity;
- Deoxygenation, which can lead to dissolved oxygen decreases to abnormally low levels in ocean waters; and,
- Harmful algal blooms, which occur when colonies of algae rapidly reproduce. Harmful algal blooms can be induced by a variety of environmental factors and are discussed separately as Issue J of this Staff Report.

Although the geographic scope of the above processes may be widespread, local stressors can increase their occurrence and compound their effects on both marine ecosystems and coastal communities. Examples of local stressors include elevated nutrient inputs into coastal waters (such as from wastewater discharges and storm water runoff) and local greenhouse gas emissions (such as from oil and gas production, cement plants, and diesel-powered vehicles and vessels).

California's coast is expected to undergo some of the earliest and most severe changes from climate change. The West Coast Ocean Acidification and Hypoxia

²⁰ Executive Order N-10-19.

<<https://www.gov.ca.gov/wp-content/uploads/2019/04/4.29.19-EO-N-10-19-Attested.pdf>>

²¹ State Water Board Resolution No. 2017-0012.

<https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2017/rs2017_0012.pdf>

Science Panel recommends that California actively employ strategies that address local factors that can reduce the frequency and severity of ocean acidification and hypoxic events.²²

At present, the State Water Board is working with the Ocean Protection Council, the Ocean Science Trust, the Southern California Coastal Water Research Project (SCCWRP), and others to better understand three questions associated with ocean acidification and hypoxia. First, what is the relationship between ocean acidification and hypoxia and impacts to marine life? Second, are land-based, anthropogenic sources contributing to impacts? A coupled biogeochemical-physical model of the Southern California Bight is currently being developed to help answer this question. Third, what parameters and threshold levels are appropriate water quality objectives to address climate change and local stressor effects on marine ecosystems?

History: Issue 13 of the 2011 Ocean Plan Review

Recommendation: State Water Board staff recognizes the impacts of climate change on California's ocean waters and the compounding effects of local stressors on water quality. More research is needed to develop water quality objectives and a program of implementation that would improve resiliency of coastal environments. Therefore, State Water Board staff recommends continuing to participate in ongoing research and undertaking a project to consider water quality objectives and a program of implementation associated with ocean acidification and hypoxia once sufficient scientific information is available.

Evaluation Score: 45

Priority: High

Estimated Resources Required: 0.5 PY to participate in ongoing research and 3 PY to develop an Ocean Plan amendment.

Issue G: Toxicity Water Quality Objectives

Ocean Plan Section: Chapter II.D (Chemical Characteristics), Chapter III (Program of Implementation), Appendix I (Definition of Terms), and Appendix III (Standard Monitoring Procedures)

²² West Coast OA and Hypoxia Science Panel established by Assembly Bill 2139 (2016).

Summary: The State Water Board may revise toxicity water quality objectives, program of implementation, and monitoring procedures or requirements to replace the toxicity unit statistical approach with the test of significant toxicity.

Aquatic toxicity is a measurement of the effects of a chemical substance on aquatic organisms such as fish, invertebrates, and aquatic plants. Toxicity testing involves exposing organisms to a water sample of interest, such as a sample of wastewater effluent, to a control water sample and then measuring the difference between the organisms' survival, growth, or reproduction in the two samples.

Several statistical approaches can be used to analyze toxicity test result data. The Ocean Plan currently uses the toxicity units statistical approach based on U.S. EPA's Technical Support Document²³ approach, which was developed in 1991. However, U.S. EPA's Test of Significant Toxicity²⁴ is a newer and improved statistical approach that increases the user's confidence that a sample is not toxic to aquatic life by specifying acceptable confidence levels, including clear thresholds of acceptable biological responses as regulatory management decisions, incentivizing high quality laboratory data, and producing a clear pass or fail result.

The test of significant toxicity is used in several Regional Water Boards' NPDES permits and is a key component of revised toxicity water quality objectives proposed for the forthcoming ISWEBE Plan.

History: New in 2019

Recommendation: As resources are available, State Water Board staff recommends amending the Ocean Plan to replace the toxicity unit statistical approach with the test of significant toxicity statistical approach in the acute and chronic toxicity water quality objectives and associated program of implementation and monitoring procedures. This project would create consistency between the Ocean Plan, the ISWEBE Plan, and several Regional Water Boards' basin plans.

Evaluation Score: 42

Priority: High

²³ U.S. EPA's Technical Support Document. <<https://www3.epa.gov/npdes/pubs/owm0264.pdf>>

²⁴ U. S. EPA's National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document. <https://www3.epa.gov/npdes/pubs/wet_final_tst_implementation2010.pdf>

Estimated Resources Required: 2 PY

Issue H: Shellfish Harvesting Beneficial Uses and Water Quality Objectives

Ocean Plan Section: Chapter I (Beneficial Uses) and Chapter II.B.2 (Shellfish Harvesting Standards)

Summary: The State Water Board may revise shellfish harvesting beneficial uses to distinguish between recreational, commercial, or tribal types of harvesting and may revise the bacterial objectives applied to areas where shellfish are harvested.

Shellfish harvesting is a beneficial use included in Chapter I of the Ocean Plan. The shellfish harvesting beneficial use encompasses both recreational and commercial harvesting. However, the State Water Board is considering amending the Ocean Plan to separate the shellfish harvesting beneficial use into recreational shellfish harvesting and commercial shellfish harvesting beneficial uses. Since harvesting for recreational use is defined in part by the method of collection (i.e., by hand), this method of shellfish harvesting is typically near shore where the rate of ocean waters mixing is lower. In contrast, commercial shellfish harvesting is typically done by boat in deeper open water or bays where the rate of mixing is greater. This difference in rates of mixing impacts bacteria concentrations in the water; for example, higher rates of mixing in deeper waters dilute bacteria levels faster.

The State Water Board is also considering options to identify tribal shellfish harvesting uses as part of this issue or as part of Issue T. Native American tribes may collect shellfish for many uses, including for consumption, cultural uses, ceremonies, or use in art. The State Water Board adopted the Tribal Tradition and Cultural beneficial use and the Tribal Subsistence Fishing beneficial use in 2017 for inland surface waters, enclosed bays, and estuaries. Issue T describes a potential project to amend the Ocean Plan to include these uses for ocean waters.

Chapter 2.B.2 of the Ocean Plan establishes a total coliform objective that applies to all areas where shellfish are harvested for human consumption. However, the State Water Board has received comments from Regional Water Boards and stakeholders that the Ocean Plan's shellfish harvesting total coliform objective is unattainable. To effectively protect human health related to commercial and recreational shellfish harvesting, the State Water Board is:

- 1) Considering revising the total coliform objective or developing a fecal coliform objective. Fecal coliform is a more appropriate indicator for shellfish harvesting

than total coliform. In addition, establishing a fecal coliform objective would align the Ocean Plan with National Shellfish Sanitation Program's²⁵ guidelines for commercial shellfish growing areas. If developed, a fecal coliform objective may replace the total coliform objective or be proposed concurrently with a revised total coliform objective.

- 2) Considering establishing bacterial objectives distinctive to recreational, commercial, and tribal shellfish harvesting.

History: Issue 5 of the 2011 Ocean Plan Review, and Issue 2 of the 2005 Ocean Plan Review

Recommendation: State Water Board staff recommends undertaking a project to consider amending the Ocean Plan to (1) separate the shellfish harvesting beneficial use into recreational shellfish harvesting, commercial shellfish harvesting beneficial uses, and potentially tribal shellfish harvesting beneficial uses; and (2) revise the existing shellfish harvesting total coliform objective, develop a fecal coliform objective, or both.

Evaluation Score: 44

Priority: High

Estimated Resources Required: 3 PY

Issue I: Exceptions to the Ocean Plan for Discharges into ASBS

Ocean Plan Section: Appendix VII (Exceptions to the California Ocean Plan)

Summary: The State Water Board will review and may revise exceptions to the Ocean Plan.

Chapter III.J of the Ocean Plan states that all exceptions to Ocean Plan requirements issued by the State Water Board and in effect at the time of the triennial review will be reviewed at that time. Appendix VII lists the thirteen existing exceptions to the Ocean Plan. The State Water Board has identified two exceptions that require further consideration and review: the exception of the discharge prohibition for San Francisco's wet weather discharge from their combined storm water and wastewater collection system (discussed in Issue V)

²⁵ National Shellfish Sanitation Program page. <<https://www.fda.gov/food/federalstate-food-programs/national-shellfish-sanitation-program-nssp>>

and the general exception of storm water and nonpoint source discharges to areas of special biological significance (discussed here).

In 2012, the State Water Board granted exceptions to the Ocean Plan's prohibition of storm water and nonpoint source discharges into ASBS (Chapter III.D.4.a of the Ocean Plan) for twenty-seven discharges through Resolution No. 2012-0012²⁶ (referred to as the ASBS General Exception). Appropriate authorizations are required in order to receive the exception, such as NPDES permits and waste discharge requirements. These authorizations must contain the prohibitions and special conditions detailed in the Special Protections, Attachment B of the General Exception. The Special Protections are intended to ensure that storm water and non-point source discharges are controlled to protect the beneficial uses of ASBS, including marine aquatic life and habitat, and to maintain natural water quality within ASBS.

Due to severe drought conditions following adoption of the ASBS General Exception, many dischargers experienced challenges implementing the conditions of the special protections. For example, dischargers experienced difficulty meeting the storm runoff monitoring frequency requirements due to a lack of rain events. In recognition of the environmental conditions the dischargers experienced, the State Water Board granted a one-year extension to complete storm event monitoring requirements. The State Water Board has been working on a case-by-case basis with dischargers to ensure compliance with the requirements of the special protections.

History: Issue 6 of the 2011 Ocean Plan Review

Recommendation: As resources are available, State Water Board staff recommends a review of the ASBS General Exception, at which point State Water Board staff will consider if revisions to the exception or additional requirements are necessary to ensure natural water quality is maintained in ASBS and beneficial uses are protected.

Evaluation Score: 46

Priority: Very High

²⁶ State Water Board Resolution No. 2012-0012 adopting exceptions to the Ocean Plan for selected discharges into ASBS.

<https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2012/rs2012_0012.pdf>

State Water Board Resolution No. 2012-0031 amended Resolution 2012-0012 on June 19, 2012.

<https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2012/rs2012_0031.pdf>

Estimated Resources Required: 2 PY

Issue J: Nutrients and Objectionable Aquatic Growth Water Quality Objectives

Ocean Plan Section: Chapter II.D (Chemical Characteristics)

Summary: The State Water Board may consider amending the Ocean Plan to refine the narrative water quality objective or include numeric water quality objectives for nutrient materials and aquatic growth.

The Ocean Plan includes a narrative water quality objective for nutrients that states nutrient materials shall not cause objectionable aquatic growths or degrade indigenous biota. Objectionable aquatic growths, such as harmful algal blooms, can be detrimental to human health, wildlife, and coastal communities. For instance, domoic acid, a biotoxin produced by some harmful algal blooms, can produce illness or death in marine mammals and humans. Harmful algal blooms occur when colonies of algae rapidly reproduce due to a variety of factors, such as warm water temperature and increased nutrients.

Multiple organizations use the California Harmful Algal Bloom Monitoring and Alert Network to coordinate sampling to track harmful algal blooms. Furthermore, the Office of Environmental Health Hazard Assessment, in consultation with the California Department of Public Health, recommends closures, delay of openings, and re-openings of fisheries based on high levels of toxic substances, including marine biotoxins, under Fish and Game Code section 5523.

The Ocean Plan includes a narrative objective for nutrients but does not include numeric water quality objectives or thresholds for nutrient levels that might cause objectionable aquatic growths, thresholds for how much of a growth is objectionable, nor what constitutes degradation of indigenous biota. Numeric water quality objectives may be more protective of beneficial uses for coastal waters, such as shellfish harvesting and water contact recreation. Ongoing research may yield appropriate indicators with which to set numeric water quality objectives.

History: Issue 14 of the 2011 Ocean Plan Review

Recommendation: At this time, State Water Board staff does not recommend amending Chapter II.D to address water quality objectives for nutrient or objectionable aquatic growth. More research and information is needed to develop numeric water quality objectives for nutrients, objectionable aquatic growths such as harmful algal blooms, and other biostimulatory substances and

conditions. State Water Board staff recommends continuing to monitor ongoing research that may identify appropriate indicators that could be used to develop water quality objectives.

Evaluation Score: 40

Priority: High

Estimated Resources Required: 0.5 PY to participate in ongoing research and 2 PY to develop an Ocean Plan amendment.

Issue K: Background Seawater Concentrations for Effluent Limitation Calculations

Ocean Plan Section: Chapter III.C (Implementation Provisions for Table 5)

Summary: The State Water Board may consider updating Table 5, formerly Table 3, to reflect background seawater concentrations of metals and metalloids in receiving waters, which are used to calculate effluent limitations.

Effluent limitations are calculated with values in Table 5 of the Ocean Plan, which lists background seawater concentrations for arsenic, copper, mercury, silver, and zinc. Elements not listed in Table 5 are defined with a background concentration of zero. However, many metals and metalloids exist in the environment due to natural sources, regional sources outside the range of the discharge, or unidentified sources.

History: Issue 15 of the 2011 Ocean Plan Review

Recommendation: State Water Board staff recommends no action at this time, but will continue to monitor updates in metal and metalloid background concentration data.

Evaluation Score: 20

Priority: Low

Estimated Resources Required: None

Issue L: Expression of Water Quality Objectives for Metals

Ocean Plan Section: Chapter II.D (Chemical Characteristics) and Table 3 (Water Quality Objectives)

Summary: The water quality objectives for metals in the Ocean Plan are generally expressed in total recoverable concentrations, while U.S. EPA water quality standards for metals are expressed as total dissolved concentrations. The State Water Board may consider revising the water quality objectives for metals in the Ocean Plan to be consistent with federal standards.

Chapter II.D.7.a of the Ocean Plan specifies that, unless otherwise specified, water quality objectives for metals in Table 3 are expressed as total recoverable concentrations.

Most water quality objectives for metals in the Ocean Plan were established prior to 1993²⁷ and were consistent with the 1993 National Toxics Rule (57 Fed. Register 60848 – 60923). However, U.S. EPA released its 1993 Metals Policy²⁸ shortly thereafter, which states that “dissolved metals more closely approximates the bioavailable fraction of metal in the water column than does total recoverable metal” (U.S. EPA, 1993, p. 2). As a result, the water quality criteria for metals are expressed as total dissolved metals in the California Toxics Rule, which applies to inland surface waters, enclosed bays, and estuaries.

History: Issue 26 of the 2011 Ocean Plan Review

Recommendation: State Water Board staff recommends no action at this time but will continue to investigate the relationship between total recoverable and total dissolved metals as needed.

Evaluation Score: 31

Priority: Medium

Estimated Resources Required: None

²⁷ All Ocean Plan metal objectives were established prior to 1993, with the exception of thallium.

²⁸ U.S. EPA’s “Metals Policy” refers to the Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria, established on October 1, 1993. <<https://www3.epa.gov/npdes/pubs/owm0316.pdf>>

Issue M: Mixing Zone and Dilution Implementation Provisions

Ocean Plan Section: Chapter III.C.4.b (Determining a Mixing Zone for the Acute Toxicity Objective), Chapter III.M.3 (Receiving Water Limitation for Salinity), and Appendix I (Definition of Terms)

Summary: The State Water Board may review mixing zone and initial dilution implementation provisions and definitions to evaluate mixing from ocean currents as effluent exits an outfall.

Mixing zones are allocated impact zones where waste effluent discharges, such as brine, forms plumes that can negatively impact marine life as they mix with ocean waters. In the Ocean Plan, mixing zone plumes are segregated into two categories by their depth: (1) deep submerged buoyant discharges, which are characteristic of most municipal and industrial submarine outfalls; and (2) shallow water submerged, surface, and nonbuoyant discharges, which are characteristic of most cooling water outfalls and individual discharges.

The Ocean Plan contains criteria for the calculation of minimum initial dilution for submerged buoyant plumes, which are dependent upon the following:

- Receiving water characteristics, such as flow rate, depth, and density;
- Effluent characteristics, such as density; and
- Outfall specifications, such as port diameter, orientation, and quantity.

For deep submerged plumes, mixing is complete when effluent ceases to rise vertically and begins spreading horizontally. In this case, turbulent mixing is dependent on discharge momentum as well as initial buoyancy. In contrast, shallow, surface, and nonbuoyant mixing are complete when either the momentum-induced velocity of effluent ceases to produce significant mixing, or the diluting plume reaches a fixed distance from the discharge point. Turbulent mixing is dependent only on the momentum of discharge for this category.

Because receiving water characteristics are fluid, the Ocean Plan relies on conservative assumptions to ensure that beneficial uses are protected. These two limiting assumptions are: (1) that the lowest average monthly trapping level, the point where effluent density matches surrounding ambient water, is used to calculate minimum initial dilution, and (2) that ocean currents do not influence plume mixing as effluent exits an outfall. State Water Board staff received a comment to consider evaluating this second conservative assumption.

History: Issue 19 of the 2011 Ocean Plan Review.

Recommendation: State Water Board staff recommends no action at this time. State Water Board staff does not recommend representing ocean currents in mixing calculations as effluent exists an outfall, as this action would likely reduce the Ocean Plan's ability to protect beneficial uses.

Evaluation Score: 21

Priority: Medium

Estimated Resources Required: None

Issue N: Bacteria Objectives for Water Contact Recreation

Ocean Plan Section: Chapter II.B (Bacterial Characteristics)

Summary: The State Water Board recommend reviewing the Ocean Plan's bacteria water contact objectives to reflect California-specific epidemiological data and provide consistency in data timeframes, geometric means, and statistical threshold values.

The Ocean Plan contains bacterial water quality objectives for fecal coliform and enterococcus bacteria to protect the public from exposure to harmful levels of pathogens while swimming or participating in other water-contact activities.

In 2012, U.S. EPA released new Recreational Water Quality Criteria for Bacteria²⁹ that recommended enterococci as the only appropriate bacterial indicator for marine waters. In 2018, the State Water Board adopted an amendment to the Ocean Plan's water contact standards which (1) removed the total coliform objective, (2) revised the enterococci objective to U.S. EPA's 2012 recreational criteria for marine waters, and (3) retained the previously established fecal coliform objective.³⁰

The fecal coliform objective was retained due to evidence provided by several epidemiological studies conducted along southern California beaches suggesting fecal coliform may be a better indicator of gastrointestinal illness than enterococci during certain types of exposures and environmental conditions. An assessment of fecal coliform data from California-specific epidemiological data may allow the calculation of a statistical threshold value and geometric mean to replace the

²⁹ U.S. EPA's Recreational Water Quality Criteria for Bacteria.

<<https://www.epa.gov/sites/production/files/2015-10/documents/rwqc2012.pdf>>

³⁰ State Water Board Resolution No. 2018-0038.

<https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2018/rs2018_0038.pdf>

existing single sample maximum and geometric mean components of the fecal coliform objective.

Additionally, the updated enterococcus objective differs from the fecal coliform objective in terms of duration and magnitude metrics. Specifically, the enterococci objective contains a six-week geometric mean calculated weekly on a rolling basis while the fecal coliform objective contains a thirty-day geometric mean calculated from the five most recent samples. This leads to confusion when grouping and assessing data to determine attainment or exceedance of the objectives.

In adopting the amendment to the water contact standards, the State Water Board directed staff to review the fecal coliform objective, including the duration and magnitude metrics, and continue to assess pathogen indicators and their implementation, accounting for risk and California-specific studies.

History: State Water Board directive set forth in paragraph 3 of Resolution No. 2018-0038.

Recommendation: As staff resources become available, State Water Board staff recommends reviewing the California-specific epidemiological studies and duration and magnitude metrics and amending the Ocean Plan if appropriate to revise the fecal coliform objective.

Evaluation Score: 47

Priority: Very High

Estimated Resources Required: 2 PY

Issue O: Desalination Implementation Provisions

Ocean Plan Section: Chapter III.M (Implementation Provisions for Desalination Facilities)

Summary: The State Water Board staff recommends reviewing the desalination implementation provisions and proposing an amendment to the Ocean Plan to clarify and streamline implementation.

As described in Section 3 of this report, the State Water Board adopted implementation provisions for desalination facilities using seawater (Chapter III.M)

on May 6, 2015, and the amendment took effect on January 28, 2016. These provisions address effects associated with the construction and operation of seawater desalination facilities and provide a uniform, consistent process for permitting seawater desalination facilities statewide. Additionally, the provisions provide direction to the coastal regional water boards for implementing California Water Code section 13142.5(b) (section 13142.5(b)), which states that “for each new or expanded facility using seawater for cooling, heating, or industrial processing, the best available site, design, technology, and mitigation measures feasible shall be used to minimize the intake and mortality of all forms of marine life.”

Since the desalination provisions took effect in 2016, State Water Board staff has been working with the coastal regional water boards and interagency partners (e.g., Coastal Commission and State Lands Commission) to implement the desalination requirements in the Ocean Plan. The provisions include preferred intake and discharge technologies to protect marine life, but also flexibility when those preferred technologies are not feasible. Facilities not proposing to use the preferred technologies take significantly longer to permit, require additional analyses, and require extensive resources from the state permitting agencies. Additionally, since the desalination provisions were adopted, there has been new information, guidance, and clarity regarding the analyses required by the regional water boards to issue a permit for a seawater desalination facility.

Stakeholders have expressed a desire to: clarify the Ocean Plan provisions and required analyses for the regional water boards to conduct the section 13142.5(b) determination and issue a permit; improve interagency coordination; and expedite the permitting process. Water Boards staff has expressed a desire to streamline the implementation process to reduce the staff resources required for conducting the section 13142.5(b) determination and issue a permit.

History: New in 2019

Recommendation: As resources are available, State Water Board staff recommends reviewing the desalination requirements in Chapter III.M of the Ocean Plan and identifying proposed amendments to clarify and streamline the permitting process.

Evaluation Score: 46

Priority: Very High

Estimated Resources Required: 3 PY

Issue P: Review of Water Quality Objectives and References in Table 3

Ocean Plan Section: Table 3 (Water Quality Objectives) in Chapter II.D (Chemical Characteristics)

Summary: The State Water Board may review and revise water quality objectives in Table 3 of the Ocean Plan to update objectives based on current scientific information.

State Water Board staff and commenters have identified that some of the water quality objectives in Table 3 are outdated or incorrectly referenced. For example, the radioactivity objective listed in Table 3 incorrectly references California Code of Regulations (CCR) title 17, division 1, chapter 5, subchapter 4, group 3, article 3, section 30253. The current reference applies to human radiation exposure through occupational pathways and needs to be updated to a reference that more appropriately protects aquatic life.

State Water Board staff recognizes that water quality objectives in Table 3 of the Ocean Plan may need to be revised and water quality objectives may need to be added for constituents not currently addressed to adequately protect beneficial uses.

History: Issue 9 of the 2011 Ocean Plan Review and Issue 13 of the 2005 Ocean Plan Review

Recommendation: As resources are available, State Water Board staff recommends conducting a review of Table 3 water quality objectives and revising water quality objectives as needed. Revisions that require minimal State Water Board staff effort, such as updating the citation for the radioactivity objective, may be addressed concurrently with a separate Ocean Plan amendment.

Evaluation Score: 32

Priority: Medium

Estimated Resources Required: 1 PY

Issue Q: Non-Substantive Administrative Changes

Ocean Plan Section: Sections throughout the Ocean Plan

Summary: This project may amend portions of the Ocean Plan to update formatting, style, and consistency.

State Water Board staff and external commenters recommended non-substantive changes that include, but are not limited to, the following:

- Re-formatting the Ocean Plan to be consistent with other water quality control plans and basin plans and to improve readability;
- Changing the identification of defined terms that are currently marked by asterisks to improve readability;
- Revising maps in Appendix VIII to more clearly distinguish between “Vessel No Discharge Zones” and marine protected area boundaries; and
- Minor editing to decrease ambiguity and fix typographical errors.

State Water Board staff will continue to evaluate potential non-substantive changes and generally will propose changes concurrently with amendments for other issues.

History: Non-substantive changes have been proposed as needed and were adopted concurrently with other amendments.

Recommendation: State Water Board staff recommends making non-substantive administrative changes to the Ocean Plan concurrently with amendments for other issues.

Evaluation Score: 40

Priority: High

Estimated Resources Required: <0.5 PY

Issue R: Expand Waste Definition to Include Potential Discharges

Ocean Plan Section: Chapter III.E (Implementation Provisions for Marine Managed Areas) or Appendix I (Definition of Terms)

Summary: The State Water Board may revise the Ocean Plan to address potential discharges of waste.

Appendix I of the Ocean Plan defines waste as “a discharger’s total discharge, of whatever origin, i.e., gross, not net, discharge.” This definition does not address

situations where there is the potential to discharge waste, which is common in Regional Water Board basin plans. An example of a potential discharge to ocean waters includes coastal and marine construction projects that may encounter emergency scenarios that result in short-term emergency discharges. Amending the Ocean Plan to address the potential for discharge of waste, particularly to ASBS, would better protect beneficial uses of the state's ocean waters.

History: New in 2019

Recommendation: As resources are available, State Water Board staff recommends reviewing and potentially revising the Ocean Plan's definition of waste to include the potential for waste discharges.

Evaluation Score: 30

Priority: Medium

Estimated Resources Required: <0.5 PY

Issue S: Natural Source Exclusion

Ocean Plan Section: Chapter III (Program of Implementation)

Summary: The State Water Board may amend the Ocean Plan to include language that addresses natural sources of constituents that enter ocean waters of California.

Many bacterial, chemical, biological, and physical conditions vary spatially and temporally along California's coastline. Some stem from naturally occurring sources, such as dense marine mammal populations on beaches that elevate local ammonia levels. However, the Ocean Plan does not include language to consider the presence of natural sources of constituents when water quality objectives are exceeded.

The State Water Board may amend the Ocean Plan to include implementation provisions that address exceedances of water quality objectives by natural sources of constituents.

History: New in 2019

Recommendation: As resources are available, State Water Board staff recommends working with Regional Water Boards to identify constituents that are prone to exceedances of water quality objectives due to natural sources. Additionally, staff recommends amending Chapter III of the Ocean Plan to include implementation provisions to consider natural sources when water quality objectives are exceeded.

Evaluation Score: 39

Priority: High

Estimated Resources Required: <1 PY

Issue T: Tribal Beneficial Uses

Ocean Plan Section: Chapter I (Beneficial Uses)

Summary: The State Water Board may amend the Ocean Plan to define and designate tribal beneficial uses.

Tribal beneficial use designations aim to protect or enhance water resources that are used by California's Native American tribes. A recent directive from the Governor of California³¹ encourages cooperation between state agencies and tribal governments. Therefore, the Water Boards considers tribal beneficial uses in plans, policies, and reviews.

On May 2, 2017, the State Water Board adopted two tribal beneficial uses, defined as Tribal Tradition and Culture (CUL) and Tribal Subsistence Fishing (T-SUB), specifically for inland surface waters, enclosed bays, and estuaries³² through Resolution No. 2017-0027³³, which took effect on June 28, 2017. These beneficial use definitions will be used in Regional Water Board basin plans in the process of designating tribal beneficial uses for specific water bodies. The State Water Board and nine Regional Water Boards continue to collaborate and coordinate amendments incorporating tribal beneficial uses in water quality control plans.

³¹ Governor's Executive Order B-10-11. <<http://deltacouncil.ca.gov/docs/gov-browns-executive-order-b-10-11-re-ca-native-american-tribes>>

³² State Water Board Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions. <https://www.waterboards.ca.gov/water_issues/programs/mercury/docs/hg_prov_final.pdf>

³³ State Water Board Resolution No. 2017-0027. <https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2017/rs2017_0027.pdf>

Several of the Regional Water Boards are currently working to restate the CUL and T-SUB uses and establish tribal beneficial use designations in their basin plans. In their most recent basin plan triennial reviews, four of the nine Regional Water Boards identified designating tribal beneficial uses as a priority project. The San Diego Regional Water Board plans to incorporate tribal beneficial use definitions into its Basin Plan in a forthcoming amendment. Additionally, it is coordinating with local Native American tribes to identify priority water bodies to be designated with tribal beneficial uses in its next triennial review.

In February 2019, the State Water Board held a tribal focus scoping meeting for the Ocean Plan Review and received many comments that supported adding tribal beneficial use definitions to the Ocean Plan and designating ocean waters with those uses.

History: New Project

Recommendation: State Water Board staff recommends adopting definitions of tribal beneficial uses in the Ocean Plan consistent with the CUL and T-SUB uses in place for inland surface waters, enclosed bays, and estuaries. Staff also recommends considering the designation of those uses to some or all ocean waters.

Evaluation Score: 48

Priority: Very High

Estimated Resources Required: 1 PY

Issue U: Microplastics and Microfibers

Ocean Plan Section: Not yet specified

Summary: The State Water Board may amend the Ocean Plan to address microplastics and microfibers. This may include developing monitoring methods, monitoring requirements, or an amendment to the Ocean Plan with water quality objectives and implementation provisions.

Microplastics broadly encompass a variety of both types and forms of plastic. Some are artificially created for use in various industries, such as microbeads and microfibers. Others result from the fragmentation of larger plastic debris.

Microplastics originate from many sources, but their size and chemical stability make them especially difficult to remove during the wastewater treatment process. Many ultimately end up in ocean waters, where they can persist for thousands of years.

These particles are pervasive and may pose a threat to marine life. They may cause impacted feeding, reproductive issues, and death. Furthermore, some microplastics easily absorb persistent organic pollutants, such as polychlorinated biphenyls and polycyclic aromatic hydrocarbons, which may amplify pollutant biomagnification and bioaccumulation. Microplastics may also affect human health through the ingestion of marine species.

Both California and the federal government banned the use of microbeads in personal care products in 2015 (Pub. Resources Code, § 42362; Microbead-Free Water Act of 2015). However, microplastics continue to accumulate in coastal and marine waters.

In 2018, California passed legislation to direct the Ocean Protection Council to develop, adopt, and implement a statewide microplastics strategy (Pub. Resources Code, § 35635). This initiative aims to develop a greater understanding of the risks of microplastics in marine environments. State Water Board staff intends to coordinate with agencies and organizations, such as the Ocean Protection Council and the Southern California Coastal Water Research Project, in considering microplastics research and to seek solutions for the growing problem. Furthermore, the State Water Board may consider amending the Ocean Plan to include monitoring and reporting provisions or to develop water quality objectives for microplastics and microfibers.

History: New in 2019

Recommendation: State Water Board staff recommends continuing to follow microplastics research and consulting with the appropriate agencies and organizations. As resources allow, staff recommends exploring monitoring methods and monitoring requirements. Staff may recommend developing an amendment to the Ocean Plan to develop a water quality objective or program of implementation to address microplastic and microfiber pollution.

Evaluation Score: 44

Priority: High

Estimated Resources Required: <1 PY to participate in ongoing research and 3 PY to develop an Ocean Plan amendment.

Issue V: Exception to the Ocean Plan for San Francisco Storm Water and Wastewater Discharges

Ocean Plan Section: Appendix VII (Exceptions to the California Ocean Plan)

Summary: The State Water Board will review and may revise the San Francisco exception to the Ocean Plan.

Chapter III.J of the Ocean Plan states that all exceptions to Ocean Plan requirements issued by the State Water Board and in effect at the time of the triennial review will be reviewed at that time. Appendix VII lists the thirteen existing exceptions to the Ocean Plan. The State Water Board has identified two exceptions that require further consideration and review: the exception of the discharge prohibition for San Francisco's wet weather discharge from their combined storm water and wastewater collection system (discussed here) and the general exception of storm water and nonpoint source discharges to areas of special biological significance (discussed in Issue I).

The City and County of San Francisco have a combined storm and wastewater collection system. When rainfall exceeds 0.02 inches per hour, untreated domestic wastewater mixed with storm water runoff is discharged into the ocean through any of eight wet weather diversion structures in the Richmond Sunset Sewerage Zone. On March 23, 1979, the State Water Board adopted Water Quality Order No. WQ 79-16³⁴, granting an exception to the Ocean Plan for wet weather discharges, with an average of 8 annually, from these wet weather diversion structures.

The exception contains specific conditions that must be implemented by the discharger for protection of water quality and beneficial uses. These wet weather discharges are permitted through a joint U.S. EPA and San Francisco Bay Regional Water Board NPDES Permit No. CA0037681 and San Francisco Bay Regional Water Board Order No. R2-2009-0062³⁵, which is currently being revised. The San Francisco Bay Regional Water Board's Tentative Order³⁶ for NPDES NO.

³⁴ State Water Board Water Quality Order No. WQ 79-16 adopting the SF Bay Exception.
<https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/1979/wq1979_16.pdf>

³⁵ San Francisco Bay Regional Water Board Order No. R2-2009-0062.
<https://www.waterboards.ca.gov/sanfranciscobay/board_decisions/adopted_orders/2009/R2-2009-0062.pdf>

³⁶ San Francisco Bay Regional Water Board's Tentative Order for NPDES No. CA0037681.
<https://www.waterboards.ca.gov/sanfranciscobay/board_info/agendas/2019/August/Oceanside/Tentative_Order.pdf>

CA0037681 includes the conditions set forth in the exception that implement the conditions and is protective of water quality and beneficial uses considering the wet weather discharges are sourced from a combined sewer system.

The U.S. EPA submitted written comments during the public comment period for the Bacteria Objective Amendment regarding the adequacy and appropriateness of the San Francisco's exception. The State Water Board responded to U.S. EPA's comments in the Bacteria Objective Amendments Final Response to Comments³⁷. In its current state, the exception and associated permit do not require monitoring for bacteria effluent from any of the discharge locations and are not protective of human health. However, the Monitoring and Reporting Program in the Tentative Order addresses some of these concerns and requires shoreline monitoring for bacteria where water contact recreation takes place.

History: Issue 6 of the 2011 Ocean Plan Review

Recommendation: As resources are available, State Water Board staff recommends reviewing the exception for San Francisco's wet weather storm and wastewater discharges to the ocean to determine if it is appropriate to amend the Ocean Plan to revise the exception. This would include a review of the existing NPDES permit and new Tentative Order, and consideration of options such as using a variance instead of an exception.

Evaluation Score: 40

Priority: High

Estimated Resources Required: 1 PY

³⁷ Bacteria Amendments Final Response to Comments, pages 167-169.
<https://www.waterboards.ca.gov/bacterialobjectives/docs/final_rtc.pdf>

8 2019 Ocean Plan Review Work Plan

The 2019 Ocean Plan Review Issue Priority List is presented below in Table 3. This list serves as a work plan to guide future planning activities for the Ocean Program. Table 3 presents the preliminary ranking of the issues discussed in Section 7 and Table 4 presents the preliminary number of issues per priority rank. As stated in Sections 5 and 6, issue priorities will be revisited to address comments received during the formal written comment period and before the Staff Report and Work Plan is taken to the State Water Board for consideration of adoption. Each issue's criterion scores are shown in the Issue Evaluation Matrix in Appendix 1. The score that a proposed issue receives does not reflect its level of importance. The ranking system is comparative and will allow State Water Board staff to efficiently and effectively focus resources over the next several years.

State Water Board staff projects initiating one to three new projects of higher ranking in the next few years. At this time, the top three priority projects based on evaluation with the criteria in Section 6 are: 1) Issue T – Tribal Beneficial Uses, 2) Issue H – Shellfish Harvesting Beneficial Uses and Water Quality Objectives, and 3) Ocean Acidification, Hypoxia, and Climate Change Impacts.

Table 3: 2019 Ocean Plan Review Issue Priority List

Issue Identifier	Issue Name	Ocean Plan Reference	Issue Rank³⁸
A	Constituents of Emerging Concern Monitoring Procedures	Appendix III	Medium
B	Vessel Discharges and Invasive Species	Chapter III.K	Low
C	Suspended Solids Effluent Limitations	Chapter III.B	Medium
D	Water Quality Objectives for Dioxin and Related Compounds	Appendix I	Medium
E	Sediment Quality Objectives	Chapter II.D	Medium
F	Ocean Acidification, Hypoxia, and Climate Change Impacts	Chapter II	High
G	Toxicity Water Quality Objectives	Chapter II.D, Chapter III, Appendix I, and Appendix III	High

³⁸ Issue priorities will be revisited after the formal written comment period.

Issue Identifier	Issue Name	Ocean Plan Reference	Issue Rank³⁸
H	Shellfish Harvesting Beneficial Uses and Water Quality Objectives	Chapter I and Chapter II.B.2	High
I	Exceptions to the Ocean Plan for Discharges into ASBS	Exceptions to the Ocean Plan are listed in Appendix VII	High
J	Nutrients and Objectionable Aquatic Growth Water Quality Objectives	Chapter II.D	High
K	Background Seawater Concentrations for Effluent Limitation Calculations	Chapter III.C	Low
L	Expression of Water Quality Objectives for Metals	Chapter II.D and Table 3	Low
M	Mixing Zone and Dilution Implementation Provisions	Chapter III.C.4.b, Chapter III.M.3, and Appendix I	Low
N	Bacteria Objectives for Water Contact Recreation	Chapter II.B	High
O	Desalination Implementation Provisions	Chapter III.M	High
P	Review of Water Quality Objectives and References in Table 3	Table 3 in Chapter II.D	Medium
Q	Non-Substantive Administrative Changes	Sections throughout the Ocean Plan	High
R	Expand Waste Definition to Include Potential Discharges	Chapter III.E or Appendix I	Medium
S	Natural Source Exclusion	Chapter III	Medium
T	Tribal Beneficial Uses	Chapter I	Very High
U	Microplastics and Microfibers	Not yet specified	High
V	Exception to the Ocean Plan for San Francisco Storm Water and Wastewater Discharges	Exceptions to the Ocean Plan are listed in Appendix VII	High

Table 4: *Number of Issues per Priority Rank*

Priority Ranking	Number of Issues per Rank
Very High	4
High	8
Medium	8
Low	2
Total number of Issues	22

Appendix 1 – Issue Evaluation Matrix